

Attorney Docket No. P68040US1
Application No. 10/674,824

Remarks/Arguments:

Claim 1, amended hereby, and claims 5 and 6, previously presented, are pending.

Claims 2-4 and 7 are canceled, without prejudice or disclaimer.

Claim 1 is currently amended by

- (i) deleting the trimethylolpropane derivative from component (b), and
- (ii) incorporating into claim 1 the amount of component (a), as described on page 3, third full paragraph, of the specification.

Claims 1, 5, and 6 were rejected under 35 U.S.C. 112, second paragraph, as being allegedly indefinite. Reconsideration is requested.

According to the statement of rejection, the claims are allegedly indefinite because "components a) and b) are not mutually exclusive." Contrary to the allegation, there is no requirement that claim limitations be mutually exclusive in order to satisfy the requirements of §112, ¶2. Nonetheless, in a good faith effort to advance prosecution, applicants have amended the claims to establish mutual exclusivity between the recited components a) and b).

As indicated, above, "a trimethylolpropane derivative" is deleted from the claims, hereby. By deleting this language—on which the alleged lack of mutual exclusivity is based—from the claims, the §112, ¶2, rejection is overcome. Withdrawal of the rejection at issue appears to be in order.

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Claims 1, 5, and 6 were rejected under 35 USC 103(a) as being allegedly unpatentable over JP 11263962 (JP'692) or US 6362300 (Araki), each taken in view of US 3627722 (Seiter), US 4857623 (Emmerling), and US 6875303 (Samurkas). Reconsideration is requested.

In the field of polyurethane adhesives, an extremely wide variety of components are described, and those skilled in the art must choose optimal components and determine the optimal proportion of the components to one another for a particular application field.

The prior art usually found it difficult to bond glass to painted steel using an adhesive without using any primer. This was the problem facing the instant inventors. Thus, the goal of the instant inventors was obtaining a moisture-curing one-pack urethane adhesive composition that bonds glass, without using any primer, to painted steel.

Through intensive investigation the present inventors found that, by combining the particular components (a)-(d), in the particular amounts, as recited in the present claims, they were able to obtain the sought after moisture-curing one pack urethane adhesive composition for bonding glass to non-primed, painted steel.

Thus, applicants' invention, as defined in the present claims, resides, *i.a.*, in discovering a solution to the problem facing the prior art. In other words, patentability of the present claims over the cited references is established by applicants' achieving their goal of obtaining a moisture-curing one-pack urethane adhesive composition that bonds glass, without using any primer, to painted steel. A "patentable invention may be in the discovery of the source of the problem even though the

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remedy may be obvious once the problem is solved." *In re Sponnoble*, 160 USPQ 237, 243 (CCPA 1969).

The references relied on to reject the claims neither disclose nor suggest combining the particular components and the amounts of the components—as combined in the present claims—to prepare a moisture-curing one pack urethane adhesive composition, which effectively bonds glass to painted steel without using any primer.

In particularly, the cited references would never have led one skilled in the art to select/combine any of

- the particular isocyanate group-terminated urethane prepolymer (a),
- the particular amount of the isocyanate group-terminated urethane prepolymer (a)
- the particular hexamethylene diisocyanate derivative (b), and
- the particular amount of the hexamethylene diisocyanate derivative (b)

as combined in the present claims.

JP 11-263962 merely exemplifies hexamethylene diisocyanate as a material for the preparation of a urethane prepolymer (paragraph 27). JP 11-263961 neither discloses nor suggests that a hexamethylene diisocyanate derivative selected from the group consisting of a biuret derivative and an isocyanurate derivative (b) can be used for accomplishing the goal (above) achieved by applicants in the composition presently claimed.

Araki does not disclose any adhesive composition comprising all the components (a) to (d) in the present claims. Comparative Examples 17 to 20, in columns 21 and 22 of the reference,

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disclose adhesive compositions containing the reaction product of a hexamethylene diisocyanate (HDI) derivative and an aminosilane as well as a tin catalyst, but lacking a morpholino catalyst. However, the results of the adhesion test show that the adhesive properties of these compositions—for adhesion to glass, a coated steel plate, and an aluminum plate—are insufficient. Thus, the results merely show a problem to be solved in the prior art. On the other hand, it is apparent from comparative example 1 in the present specification that an adhesive composition containing a morpholino catalyst but lacking a tin catalyst has poor adhesive properties.

Seiter discloses a polyurethane sealant composition containing a NCO group-terminated urethane prepolymer and a silyl group-terminated polyurethane polymer prepared by reacting a part of the NCO groups of the urethane prepolymer with a silane. The silyl group-terminated polyurethane polymer differs from the adhesive promoter used in accordance with the presently claimed invention. The polyisocyanate derivative of a silane coupling agent used in accordance with the presently claimed invention as the adhesive promoter is NCO group-terminated. Seiter does not disclose any adhesive composition comprising all the components (a) to (d) in the present claims.

Emmerling discloses an alkoxysilane-terminated, moisture-hardening polyurethane prepared by reacting substantially all the free NCO groups in a particular NCO group-terminated polyurethane with at least one alkoxysilane. The alkoxysilane-terminated polyurethane differs from the adhesive promoter used in accordance with the presently claimed invention. The polyisocyanate derivative of a silane coupling agent used in accordance with the presently claimed invention as the adhesive

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promoter is NCO group-terminated. Emmerling does not disclose any adhesive composition comprising all the components (a) to (d) in the present claims.

Samurkas discloses a method of bonding glass to a substrate without the need to prime the surface of the substrate. Although the reference teaches that aliphatic isocyanates are effective as adhesion promoters, a main solution of the problem to be solved is air plasma treatment, which does not give any motivation toward the presently claimed invention. Samurkas also discloses that a NCO group-terminated polyurethane adhesive may be used for the process and, further, that the adhesive may contain a tin catalyst and an adhesive promoter such as a vinyl alkoxysilane or a isocyanatoalkoxysilane. However, Samurkas does not disclose any adhesive composition comprising all the components (a) to (d) in the present claims.

As indicated above, in the field of polyurethane adhesives, an extremely wide variety of components are described. Those skilled in the art must choose optimal components and determine the optimal proportion of the components to one another for a particular application field.

The cited references give neither any suggestion nor any motivation toward the presently claimed invention. They neither disclose nor suggest that the goal of the instant inventors—improving adhesion to non-primed, painted steels—can be achieved by the inventors' presently claimed composition, comprising the recited particular components (a) to (d) in the recited particular amounts.

The presently claimed invention overcomes a very high technological hurdle i.e., satisfactorily binding glass to non-primed, painted steel, which the prior art had been unable to

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overcome. Accordingly, applicants submit that the presently claimed invention would not have been obvious from the cited references.

The PTO still maintains that *In re Linder*, 173 USPQ 356 (CCPA 1972), and *In re Dial*, 140 USPQ 244 (CCPA 1964), control the outcome, i.e., as precedent for the legal standard that use of a known component for its known purpose is *per se* obvious. As previously pointed out on the record, to the extent that *Linder* and *Dial* support this legal standard, they have been overruled, *sub nom.* It is legally erroneous to reach a conclusion of obviousness under §103 solely on the basis that the claimed invention represents a "combination which only unites old elements with no change in their functions." *Pentec, Inc. v. Graphic Controls Corp.*, 227 USPQ 766, 771 (Fed. Cir. 1985) (emphasis added). "Reliance on *per se* rules of obviousness is legally incorrect and must cease." *In re Ochiai*, 37 USPQ2d 1127, 1129 (Fed. Cir. 1995). The PTO has yet to explain how it avoids the legal precedent by which it is bound, e.g., the *Pentec, Inc.* and *Ochai* decisions. Since the PTO arrives at the conclusion of obviousness erroneously, Withdrawal of the rejection at issue appears to be in order.

Applicants observe that the statement of rejection contends that, in addition to being prima facie obvious (as explained above), motivation to combine the cited references does, in fact, exist. According to the statement of rejection (Office Action, page 4);

Furthermore, the compositions of the secondary references are disclosed as being adhesive sealants for such substrates as glass; therefore, one seeking to improve the adhesion of polyurethane to such substrates would have been motivated to employ the adhesion promoters of the secondary references within the composition of the primary references [emphasis added].

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A salient deficiency in this argument is that it presumes that combining the adhesion promoters (of the secondary references) within the composition (of the primary references) would have been expected "to improve the adhesion of polyurethane to such substrates." Nothing in any of the cited references teaches or suggests that the combination would result in an improvement in the adhesion of polyurethane to a substrate such as glass.

"Both the suggestion and reasonable expectation of success must be founded in the prior art." *In re Vaeck*, 20 USPQ2d 1438, 1441 (Fed. Cir. 1991). In the present case, even assuming, arguendo, that a suggestion to effect the combination can be found in the cited references, the cited references neither teach nor suggest a "reasonable expectation" of successfully obtaining improved adhesion and, so, the PTO has failed to demonstrate the requisite support for a rejection for obviousness under §103(a). *Vaeck*, 20 USPQ2d at 1441. As such, withdrawal of the rejection at issue appears to be in order.

Applicants invite the PTO to view the cited references as they would have been viewed by one of ordinary skill in the art, i.e., without looking at the subject application. Looking only at the cited references, themselves, the PTO would be hard pressed to try and select (for combination) precisely the same components and their amounts as selected and combined in the present claims.

With all due respect, the PTO cannot dispute that it looked for each of the recited (claim) limitations in the cited references. To a certain extent, of course, the PTO can only search the prior art in this manner. There is a point, however, where the line is crossed between using the claimed invention to search the prior art, on the one hand, and using the claimed invention to interpret the

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prior art uncovered by the search, on the other. In the present case, again with all due respect, the PTO has inadvertently crossed the line.

As requested, above, the PTO should put the claims aside—physically and mentally—before studying the prior art references (obtained from the search). If the obtained references truly render obvious the claimed invention, the PTO should, obviously, be able to come up with the identical combination of limitations found in each of the claims being examined, without referring to the specification and claims.

On the other hand, if the PTO looks in the obtained references for a description matching each of the claim limitations, then tries to find some justification, in the references, for inferring non-described limitations and for combining, both, the described and inferred limitations, this amounts to proscribed hindsight reconstruction. Obviousness under §103(a) can not be based on (i) picking and choosing from among components found in other combinations in the different references and (ii) the optimization of disclosed component amounts different from those recited in the claims.

It is insufficient that the prior art disclosed the components of the patented device, either separately or used in other combinations; there must be some teaching, suggestion, or incentive to make the combination made by the inventor.

Northern Telecom, Inc. v. Datapoint Corporation, 15 USPQ2d 1321, 1323 (Fed. Cir. 1990), *cert. denied*, 498 U.S. 920 (1990). With respect to the component amounts, the PTO does not explain how component amounts that are *unknown* to the skilled artisan (i.e., those recited in the present claims) are arrived at by the skilled artisan by *optimizing* different component amounts found in the cited references.

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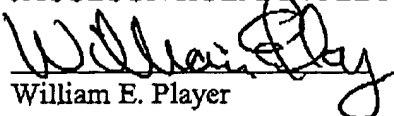
Optimization has long been discredited as justification for a finding of (rejection for) obviousness under §103(a). That a difference with the prior art amounts to an alleged "optimal condition . . . is not a substitute for some teaching or suggestion supporting an obviousness rejection." *In re Rijckaert*, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). When obviousness of a claim limitation is grounded on its allegedly being "old and well known in the art . . . as a means of optimization which is highly desirable," the "ground of rejection is simply inadequate on its face . . . because the cited references do not support each limitation of [the] claim." *In re Thrift*, 63 USPQ2d 2002, 2008 (Fed. Cir. 2002). Since the rejection relies on optimization as "a substitute for" disclosure that supports a "limitation of [the] claim," the rejection under §103(a) is "inadequate on its face." *Rijckaert*, 28 USPQ2d at 1957, and *Thrift*, 63 USPQ2d 2008. In this respect, applicants also incorporate herein by reference their remarks, including the controlling precedent cited, presented in the response paper filed September 27, 2005.

Favorable action is requested.

Respectfully submitted,

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